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USES AND REQUIREMENTS OF DRINKING WATER SUPPLY

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USES AND REQUIREMENTS OF DRINKING WATER SUPPLY

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In this paper I discuss a problem of Turkey. I think similar problem encountered in the other countries. Drinking water supply situation in the rural areas is the main topic of this paper.

Due to the historical pattern of settlement, and due to the fact that 80 per cent of the people of the country engaged in farming, there are about 60,000 villages or communities in Turkey. Almost 55,000 of these communities having about 15,000,000 people did not have enough, clean drinking water a decade ago.

Today, about 30,000 of these communities having about 7,000,000 people are living under the same conditions as before.

The problem is very acute. Water is a very basic ingredient of the life. There are many heart breaking observations.

In some communities, water used for drinking is half mud and half water obtained from a shallow well after waiting for hours. In some communities it is carried on donkey or on the shoulder from faraway distances. In some other communities water is obtained from rather deep wells by hand.

This is a torture. Because men are busy with some other things, burden is mostly on the shoulder of women and children.

In many cases water obtained so hard is unclean.

Animals have the biggest share in using this water. Then come children for drinking, adults for drinking. Washing is almost out of question. Water for washing is a luxury item.

Solving this problem is a very humanistic and social affair in the one hand. On the other hand, it has a great share in the economy of the country. Saving the hours of people, improving health conditions.

This problem can only be solved with cooperation of Government and people. If people were able to solve this problem by

themselves they should not live under conditions described above.

That is why Government has to carry a great leadership in this matter.

People can only provide labor and some financial aid. Government has to provide technique, materidl and additional funds.

60 Litres per capita per day, 50 litres per cattle per day, 15 litres per sheep per day will be good enough.

The first important problem is the source. Water, clean and enough is to be found.

Programs started with improving the existing facilities to obtain maximum benefit from unit fund. In this case maximum benefit criteria will be to get water to as many people as possible in the shortest time with the least money .

In many cases "source" of water presents itself a difficult problem.

In the rural areas most simple facilities should be built.

Purification and pumping are to be escaped wherever possible. They will be too complicated for operation by the people. Wherever possible gravity systems are to be tried.

As a dependable and first choice source springs in reasonable distances are to be surveyed.

If there is a spring, it should be brought to the village by a pipe line, and a few fountain is to be built in the village to avoid the distribution expenses. This will eliminate great difficulties. People will be happy.

Another source will be ground water. If an artesian well developed this will be very satisfactory.

In many cases, there will be no source within reasonable distances.

In such cases, different techniques are to be tried. Even new techniques are to be invented.

A group of villages are to be supplied from one source. This may be a spring, a small dam, a collection gallery, shallow or deep well or group of wells.

Resettlement of villages are to be thought as a very last measure. Because the reason people settled those places sacrificing lack of water is they have some way of earning their life. Shifting the villages will not move the resources they depend on.

Wherever water is in the excessive amount from the need is existing, it should be conveyed to the village. With the surplus amount villagers should do truck gardening which will add some new items to their daily diet.

Small ponds for watering the animals should be a part of village water systems. In many places, village women wash laundry near to the source of water in the open air winter and summer. There should be small closed place to improve the health conditions of village women.

In the pipe line earthen pipes, concrete pipes, steel pipes, cast iron pipes, asbestos-cement pipes are tried.

In the areas where there are trees earthen pipes and concrete pipes are complete failure. Roots of the trees will plug the pipes. Earthen pipes and concrete pipes are very cheap. In many cases they have been used for pressures they should not be used. Asbestos-cement pipes are proven most economical.

Hauling of the pipes will be costly and difficult. Because there is no road in many instances. Steel pipes of small sizes up to there inches either galvanized or bitumized are very easy to haul and to joint. They are most commonly used. For larger sizes, uses of cast iron pipes become necessary.

Fountains are very simple structure. Water flowing all the times whether needed or not from a pipe through a wall is the typical fountain. One further step will be addition of water tanks or reservoirs to these simple systems.

Distribution of water in the village will be the another modification required very soon in the systems.

Both will increase the cost. But, improvment in the earnings will necessitate that.

I like to see more architectural improvments in the fountain, itself. This again will increase the cost. Maintenance and operation of jointly built systems by government and people will be carried out by the people under the technical supervision of the construction agency. If more than one village are using the system they should form a district or association. Implementation of such a plan is very urgent. In many cases planning, design, construction should be done at the same time. Therefore special measures are needed.

Construction agency should have great power. Without cooperation

with local authorities and villagers it will not be possible to have success. Water rights may be a barrier. A special law has to provide very broad authority to construction agency. Construction agency should be able to train some technicians through short courses. then with additional courses out of construction seasons these courses should be repeated to develop the technicians. Typical designs should be drawn.

Specifications applicable diffrent conditions are to be written. Manufacture of material which are needed for construction are to be promoted.

Construction agency has to carry out a great portion of the program by force account. Therefore construction agency should have an effective organization to push the program. Construction agency should have several drilling teams if drilling contractors are not existing in the country. Drilling will be a key operation of the program. In the development of ground water, in many cases amount of water could be obtained from the well will be more than needed amount for drinking purposes. In such occasions well should be developed to its capacity and surplus water is to be used for the development of irrigation.

Criteria for programming is an important aspect of the implementation of such a plan. Upon a survey following criteria is adapted. High priority should be given to those villages:

(a) have very urgent needs (means they are in a desperate situation)
(b) have crowded population.
(c) have minimum cost per capita.
(d) have financial contribution, no charge for right of way.
(e) have provided labor.
(f) have set up association (if more than one village involved)

Expanding towns and cities are another pressing matter.

In the expanding towns and cities, due to the lack of funds or very limited amount of funds and due to the managerial shortsightedness amount of water needed in the town is never supplied. Water shortage is the main problem of such towns and cities. This is a real threat to the further expansion of the town from stand point of industry and development of new residential districts.

In many cases municipalities handles water supply for their town.

Municipalities have to keep up with the growth.

New sources of water is to be tapped prior to the need is urgently developed.

These sources will be in the order of ground water, long distance conveyence, pumping, building dams and reservoirs.

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